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Claims

1   1.   Broadcast receiver, comprising:

a first tuner (1) receiving a broadcast program on a predetermined frequency of a predetermined broadcast system,

a second tuner (2) receiving said broadcast program on an alternative
5   frequency of said predetermined broadcast system or of an alternative broadcast system, and

a delay unit (3) receiving an output signal of said first tuner (1) and an output signal of said second tuner (2) to compensate a time delay between said both output signals.

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2.   Broadcast receiver according to claim 1, **characterized by**

a correlation unit (3c) within said delay unit (3) to determine the time delay between said output signal of said first tuner (1) and said output signal of said second tuner (2).

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3.   Broadcast receiver according to claim 2, **characterized in that**

said correlation unit (3c) receives a respective mono signal of said output signal of said first tuner (1) and of said output signal of said second tuner (2).

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4.   Broadcast receiver according to anyone of claims 1 to 3, **characterized by**

a first variable delay element (3e) within said delay unit (3) to delay said output signal of said first tuner (1) in case said output signal of said first
25   tuner (1) advances said output signal of said second tuner (2), and

a second variable delay element (3f) within said delay unit (3) to delay said output signal of said second tuner (2) in case said output signal of said second tuner (2) advances said output signal of said first tuner (1).

30   5.   Broadcast receiver according to claim 4, **characterized in that**

said first variable delay element (3e) delays said output signal of said first tuner (1) with a constant delay at once, by resampling said output signal of said first tuner (1) with a higher sampling rate, i.e. interpolation, for a predetermined periode of time till the full delay is achieved and thereafter with a constant delay, or by repeating a predetermined number of single audio sam-

1   ples of said output signal of said first tuner (1) till the full delay is achieved and thereafter with a constant delay, and

said second variable delay element (3f) delays said output signal of said second tuner (2) with a constant delay at once.

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6.   Broadcast receiver according to anyone of the preceding claims, **characterized by**

an amplitude adaptation unit (4) receiving an output signal of said first tuner (1) and an output signal of said second tuner (2) via said delay unit (3)
10   to compensate an amplitude difference between said both time delay compensated output signals.

7.   Broadcast receiver according to claim 6, **characterized by**

a subtracter (4e) within said amplitude adaptation unit (4) to determine
15   a difference signal between said time delay compensated output signals of said first tuner (1) and of said second tuner (2).

8.   Broadcast receiver according to claim 7, **characterized in that**

said subtracter (4e) receives a respective low pass filtered mono signal of
20   said time delay compensated output signals of said first tuner (1) and of said second tuner (2).

9.   Broadcast receiver according to claim 7 or 8, **characterized by**

respective multipliers (4i, 4k) in the signal path of said output signal of
25   said second tuner (2) to multiply said output signal so that an amplitude of said output signal of said second tuner (2) gets adapted to an amplitude of said output signal of said first tuner (1).

10.   Method to switch a broadcast receiver from a first tuner (1) receiving a
30   broadcast program on a predetermined frequency of a predetermined broadcast system to a second tuner (2) receiving said broadcast program on an alternative frequency of said predetermined broadcast system or of an alternative broadcast system, comprising the step of:

compensating a time delay between an output signal of said first tuner
35   (1) and an output signal of said second tuner (2).

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11. Method according to claim 10, **characterized by**
determining the time delay between said output signal of said first tuner (1) and said output signal of said second tuner (2) by a correlation.

12. Method according to claim 11, **characterized by**
determining a respective mono signal of said output signal of said first tuner (1) and of said output signal of said second tuner (2) to perform the correlation based thereon.

13. Method according to anyone of claims 10 to 12, **characterized by**
delaying said output signal of said first tuner (1) in case said output signal of said first tuner (1) advances said output signal of said second tuner (2), and
delaying said output signal of said second tuner (2) in case said output signal of said second tuner (2) advances said output signal of said first tuner (1).

14. Method according to claim 13, **characterized in that**
said output signal of said first tuner (1) gets delayed with a constant delay at once, by resampling said output signal of said first tuner (1) with a higher sampling rate, i.e. interpolation, for a predetermined periode of time till the full delay is achieved and thereafter with a constant delay, or by repeating a predetermined number of single audio samples of said output signal of said first tuner (1) till the full delay is achieved and thereafter with a constant delay, and
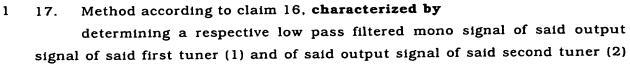said output signal of said second tuner (2) gets delayed with a constant delay at once.

15. Method according to anyone of the preceding claims 10 to 14, **characterized by**
compensating an amplitude difference between said time delay compensated output signals of said first tuner (1) and of said second tuner (2).

16. Method according to claim 15, **characterized by**
determining a difference signal between said output signal of said first tuner (1) and said output signal of said second tuner (2).

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1   17.   Method according to claim 16, **characterized by**

determining a respective low pass filtered mono signal of said output signal of said first tuner (1) and of said output signal of said second tuner (2) to determine the difference signal between said output signals based thereon.

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18.   Method according to claim 16 or 17, **characterized by**

multiplying said output signal of said second tuner (2) so that an amplitude of said output signal of said second tuner (2) gets adapted to an amplitude of said output signal of said first tuner (1).

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19.   Computer program product, **characterized by** computer program means adapted to perform the method steps defined in anyone of claims 10 to 18 when it is executed on a computer, digital signal processor or the like.

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